

What is claimed is:

1. A high-refractive-index optical silicone oil comprising a pentasiloxane having the formula:

5



wherein Me is methyl, each R is independently a C<sub>10</sub> to C<sub>12</sub> aralkyl, and the silicone oil has a refractive index of from 1.45 to 1.50 at 25 °C.

10

2. The optical silicone oil according to claim 1, wherein the refractive index is from 1.46 to 1.49 at 25 °C.

15

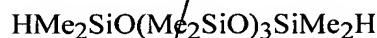
3. The optical silicone oil according to claim 1, wherein the oil has a viscosity of from 3 to 100 mm<sup>2</sup>/s at 25 °C.

*Sub  
C17*

4. The optical silicone oil according to claim 1, wherein the viscosity is from 5 to 50 mm<sup>2</sup>/s at 25 °C.

20

5. A method of preparing a high-refractive-index optical silicone oil having a refractive index of from 1.45 to 1.50 at 25 °C, comprising reacting a C<sub>8</sub> to C<sub>12</sub> aryl-containing olefin with a pentasiloxane having the formula:



25

in the presence of a supported platinum catalyst.

6. The method according to claim 5, wherein the aryl-containing olefin is styrene or α-methylstyrene.

30

7. The method according to claim 5, wherein the pentasiloxane is prepared by a nonequilibration reaction between hexamethylcyclotrisiloxane and 1,1,3,3-tetramethyldisiloxane in the presence of an acid catalyst.
- 5        8. The method according to claim 7, wherein the acid catalyst is hydrochloric acid or trifluoromethanesulfonic acid.
9. The method according to claim 7, wherein the mole ratio of 1,1,3,3-tetramethyldisiloxane to hexamethylcyclotrisiloxane is from 0.7:1 to 10:1.
- 10      10. A method of preparing a high-refractive-index optical silicone oil mixture having a refractive index of from 1.45 to 1.50 at 25°C, comprising reacting a C<sub>8</sub> to C<sub>12</sub> aryl-containing olefin with a mixture comprising a pentasiloxane having the formula:
- 15      HMe<sub>2</sub>SiO(Me<sub>2</sub>SiO)<sub>3</sub>SiMe<sub>2</sub>H
- SUB  
C7 and a disiloxane having the formula:
- 16      HMe<sub>2</sub>SiOSiMe<sub>2</sub>H
- 20      in the presence of a supported platinum catalyst,  
wherein the pentasiloxane is prepared by a nonequilibration reaction between hexamethylcyclotrisiloxane and 1,1,3,3-tetramethyldisiloxane in the presence of an acid catalyst.
- 25      11. The method according to claim 10, wherein the acid catalyst is hydrochloric acid or trifluoromethanesulfonic acid.
12. The method according to claim 10, wherein the mole ratio of 1,1,3,3-tetramethyldisiloxane to hexamethylcyclotrisiloxane is from 0.7:1 to 10:1.

30

*Add  
C7*